

LEIF'S HOUSE IN VINELAND.

BY

EBEN NORTON HORSFORD.

GRAVES OF THE NORTHMEN.

BY

CORNELIA HORSFORD.

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PREFACE.

MY father, EBEN NORTON HORSFORD, in the last paragraph of "The Landfall of Leif Erikson," stated that his next paper would trace the connection between the Northmen and the name of the Western Continent.

At one time I expected to carry out his intention; but I have since decided that it would be best to publish the following paper first, and with it a short account of the investigations I myself have made this spring, as the latter may serve to connect the two papers by showing the probable movements of the Northmen in this country from the time Leif Erikson discovered Vineland to the arrival of the Europeans at the end of the fifteenth century.

I wish to express my thanks to Mr. GEORGE G. BARNUM, the Secretary of the Buffalo Historical Society, for his kindness in sending me pamphlets, papers, etc. Also to my brother-in-law Mr. ANDREW FISCHE, for translating for me a critical essay "On the History of the Discovery of America by the Scandinavians," by Eugen Gelcich; and to Dr. WILLIAM D. SWAN for identifying for me the bones of a deer, and for accompanying me and my sister on two occasions when I examined the graves in a Norumbega graveyard.

CORNELIA HORSFORD.

CAMBRIDGE, June, 1893.

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IT is now some six years since I first announced at a scientific gathering in Cambridge that Leif's Landfall was on a little island at the summit of Cape Cod, in the opening of the 43d degree. This island, only a few square miles in area, is now connected by drifting and blown sand with the mainland near the Highland Light; but it was distinct long after Leif's Landfall, — as observed by Cosa and Allefonsce and Gosnold, and even in the early part of the eighteenth century, as shown on Lewis's map.

At the same meeting, I called attention to the brief but clear statement in the Saga of Eric the Red of Leif's sailing¹ across the mouth of Cape Cod Bay, opening out northward to the sea, from the Race to the Gurnet; his coasting westerly from the Gurnet along Scituate Beach, past the Cohasset rocks to Nantasket; his entrance into Boston Harbor; his running aground on an ebb-tide off the site of Long Wharf; his floating on the returning flood-tide up the reach, or strait, of Charles River into the expansion of the Back Bay, the Hóp of Thorfinn (the old Norse name for a small land-locked bay, salt at flood-tide and fresh at ebb), and later winding through the salt meadow and marshes up the Charles beyond the Bay, to the south end of Symonds's Hill, at the so-called Gerry's Landing in Cambridge, near which he built his large house, as indicated in the details given by Leif, Thorwald, Thorfinn, and Freydis.

¹ It is this Bay along a north and south coast which renders it impossible that Vineland should have been either in Nova Scotia or Rhode Island. Why? Because bays along an east and west shore, facing southward, cannot open to the north. Other considerations unite — as the Hóp, the Blue Hills, the times and directions of sailing — to fix the Vineland of Leif in the 43d degree.

At that time, in 1887, I took occasion to say that if any remains of Leif's house in Vineland should ever be found, they would be found between Symonds's Hill, the ancient bluff extending eastward some one hundred yards from the Cambridge City Hospital, and the angle of the Cambridge City Cemetery, about a quarter of a mile to the south.

I based this prediction on the requirements of the Sagas, — which requirements were that the main direction of the river must be from west to east; that the site of the house must look out on a promontory at the south, from behind which fleets of native canoes might have issued; that canoes must be visible across the meadows when the banks of eight to ten feet were full at the beginning of the ebb-tide; that below (that is, down stream from this promontory) must be a bend in the river, from which the canoes could approach the house, where the river flowed from southeast to northwest. All this is possible at the site of Leif's house, and nowhere else on the Charles. Such a stretch of ebb-tide from southeast to northwest, coincident with a general course of the river from west to east, *does not occur elsewhere in the forty-third degree.*

The place where Leif landed is the first place, coming up the Charles, where landing on an even keel, permitting a plank to be run out to the shore, was possible. It was the spot determined for Gerry's Landing, — the great point in the earlier days of the colony for receiving goods from the sea and transporting them in wagons to the interior. It is from the site of Leif's house that the only landing of Thorfinn's ship, on his return from seeking Thorhall, on the *southwest* bank of an incoming stream is possible.

Now, in this region are traces of large houses, some nearer, some farther, from the water; of huts, of fish-pits, and of canals, — all mentioned in the Sagas. Here also have been found fragments of soapstone bowls, such as were used by the Northmen; stone salmon-sinkers, such as were needed for the salmon-fishing mentioned in the Sagas. Near Leif's house has been found, buried in the earth, a small marble cup deeply corroded. Iron im-

* AND SETTLEMENT
NORTHMEN'S LANDING
— OF —
PLAN OF SITE





plements were not to be looked for; but remains of a house, even after nine hundred years, might be found if one knew what to look for. Fortunately Scandinavian literature tells us what to look for, and what to expect.

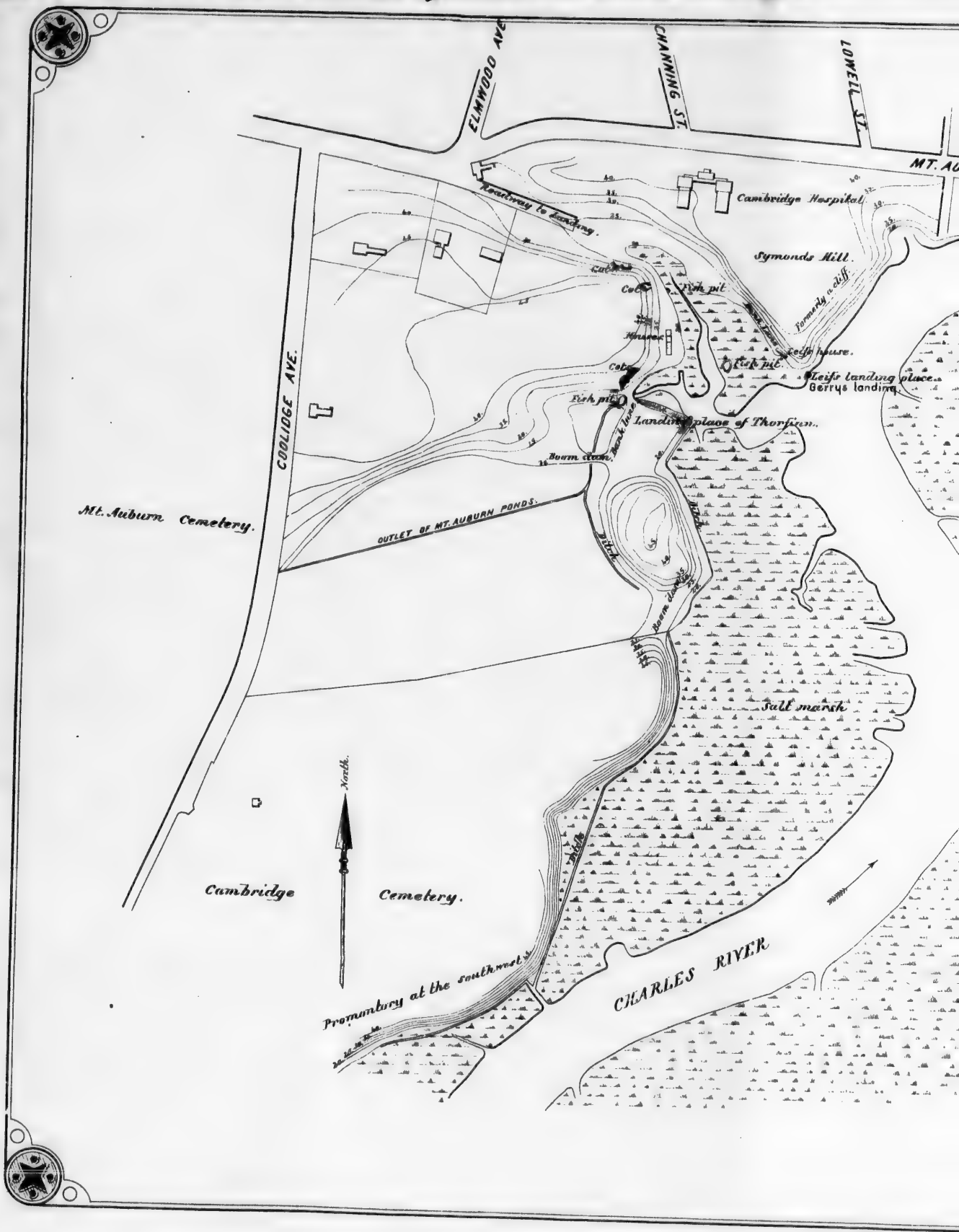
Here is a sketch (page 10) of the outlines of Leif's house, — or, for the present, let us say *a* house on the spot where, according to the Sagas, Leif must have built one. I say *must*, because the combinations of relative positions, movements of tides, topography, artificial structures, to which description dating back nine hundred years fits to-day, without a wanting element, *cannot* apply to two groups of entities. A little reflection will satisfy the candid mind on this point.

Take the following illustration: Conceive a set of cubical blocks, each having a letter of the alphabet on one side, to be drawn by a blind man from a bag, and appearing in the succession, A, B, C, D, and so on to the end, with the letters on the top as he laid them down. Now, it is impossible to resist the conviction that the alphabetic succession was *determined* by a necessity. Add the lettered face on the top of each block, and the correct position of all the letters, and how overwhelming the demonstration!

So is it, I conceive, in the case of the locality of Leif's house. I long ago found one end of the chain, which drew out the picture described in the Sagas.

But let us see what confirmation the examination of the remains of a house found where Leif's *must* have been, has brought.

The accompanying sketch (page 10) has been prepared by the City Engineer (who himself made the survey), from a sketch by Miss Cornelia Horsford. It is the result of an effort to show the slight unevennesses, which scarcely exceed one foot in altitude in extreme variation. The outline of the house will be seen to be a tolerably regular parallelogram. The Charles River Bank at a distance of less than a hundred feet will be seen in the accompanying map of the region round about. The lines of connecting little squares indicate the enclosing fence of stone posts and iron rods: it is some seventy-five by twenty-five feet. The long side toward the top of





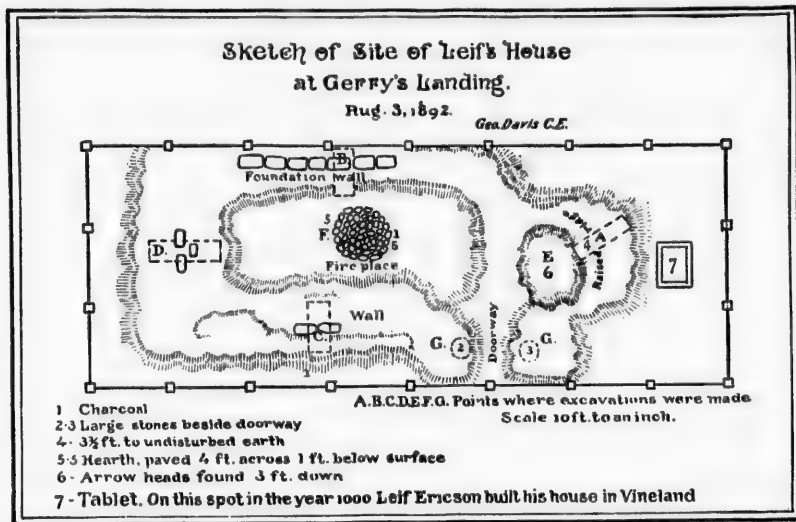
PLAN OF SITE
— OF —
NORTHMENS LANDING
* AND SETTLEMENT
ON CHARLES RIVER,

March 9, 1889.

George Davis C.E.

the cut faces south,—a uniform but not invariable characteristic of peasants' houses in Iceland.¹ The whole surface is covered with turf, which in the early spring betrays the irregularities with much distinctness. As the length of the grass increases, obscurity of the outlines increases with it.

Near the tablet is a semi-circular ridge, salient from the end of the house toward the river. As the Saga mentioned that the house was both *fenced*



about and fortified (one would think for the better protection of Gudrid and her little child), it was conceivable that this curved outline marked the place of the fortification. It was an outlook commanding the river up and down. Here was something like a breastwork of earth, and perhaps wooden coping. I dug out the area behind, down to undisturbed earth,—about four feet. This pit would give shelter from arrows of horizontal flight. They might

¹ See Saga Time.

have reached the interior in a plunging flight. Two such — one perfect — were found within, at a depth of about three and a half feet. Without, and immediately in front of the salient, arrow and spear points have been found in excavation. The arrow-points were identical in form, shape, and size with the perfect one found within. No spear-points were found within; but elsewhere spear-points and arrow-points, identical in form, have been found together and in great numbers, on what were considered by Mr. Frank Hamilton Cushing to be battle-fields.

It is well known that there was in relatively modern times a store-house at Gerry's Landing; and it might be expected that the remains of any imperishable articles, and of freight landed and reloaded, might be found, but of course *nearer* the present surface. This has been the case. I have found chips of broken bricks and fragments of earthenware. The latter were glazed. They could not have been Norse.¹

I dug a trench through the semi-circular ridge, but found only gravel. On the south side of the outline and near the salient was a marked depression, as if there had been a door. If there were door-posts, they should have had something to stand on. On digging down a foot or more on either side of the doorway, a boulder of two thirds of a bushel-basket capacity was found.

The outline of the house of logs horizontally resting each upon that below — as is the case of Norwegian houses and of early settlers here — might be expected to have rested on stones, as a protection against decay of the lowermost logs. Such stone foundations were found, in probing the ground with an iron rod, at a depth of about a foot, and were at various points uncovered, as shown in the cut. Such construction prevails throughout Norway to-day, not alone among the dwellings of the peasants, but in the more pretentious houses of the towns, — as in Stavanger, Bergen, and Christiania.

Outside of the lines of the cut at *B*, *C*, and *D*, one remarks at a little distance a slight declivity, which seems continuous. It does not seem

¹ The art of glazing was unknown to Scandinavia. See Du Chaillu and Montelius.

improbable that this is what remains of the stockade referred to in the expression "fenced round about," and "threw their bundles of furs over the paling."

Thorfinn came in the time of young corn-plants. Later he built the stockade. The Saga says:—

"It now behooves to relate that Karlsefni had a strong stockade made about his building, and fortified the place. At this time Gudrid his wife gave birth to a male child, and this boy was named Snorri. . . . Early the next winter the Skraelings came to them, having bundles of furs and clothing of skins [all kinds of peltry to barter. Karlsefni had milk and dairy products brought out to exchange; but they wanted weapons instead]. They threw their bundles *inside* the stockade."¹

These passages are explicit. There was a continuous row of upright posts round the house, and near it. "They threw their bundles inside the paling;" that is, the stockade. The expression "fortified the place" would apply well to the narrow curved ridge which looks out from the east end of the house upon the river, both up and down. Behind this curved ridge there was the pit, some four feet below the level: excavation to undisturbed earth showed it. The ridge and the pit offered defence, and provided a sheltered outlook.

Besides these features, there are two points of special significance in connection with the appointments of the long house, pointed out as characteristic of Norse houses in "Saga Time," and of dwelling-houses in the country of Norway to-day, and of the cuts of the foundations of houses given in Baron Nordenskjöld's second expedition to Greenland. Such houses are indicated in the term "*lunga villa*" on the maps of Hieronymus Verazano and Maiollo, of the expedition of 1524, and on the copper globe of Ulpius in the library of the Historical Society of New York.²

The first of these features is the *fireplace* of small boulders in the centre of the house. An ancient Norse house required it. The ancient houses of

¹ The entrance to the house was obviously closed.

² That this is the type of the house of the Iroquois, the Ho-de-oh-saunes of Morgan, is of the widest reach as an ethnological fact, which I have elsewhere discussed, but which cannot be entered upon here.

the Highlanders of Scotland¹ have them still. So assured was I that this characteristic of the house would be found, that I announced it to the workmen, who of course showed becoming incredulity. I told them that if they would dig a trench along the middle of the house they would uncover a fireplace. The turf and blown sand were a foot thick. I indicated the spot where the hearth would be found. My prediction was verified. An area of about four feet in diameter, covered by boulders, was exposed. Some were whole, fine-grained, and compact, preserving their original shape, but pitted at the surface as if they had been exposed to prolonged heat; others were cracked into several pieces; others still, being originally fissile gneiss or finely stratified sand and argillaceous material, were resolved into thin fragments like slate. One of the blocks that had preserved its general form, but with all its angles rounded, was observed to be of dull red, as if covered with reddish brown rouge. I said, "If this redness is due to peroxide of iron, I shall find the interior of a greenish shade, — due to the presence of mineral combinations of protoxide of iron." A lapidary cut the stone into thin slices. As I expected, in the interior where, though heated, it had been *protected* from the air, the color was of a dull bottle-green. The belt of outer surface, where it had been heated and *exposed* to the air, was reddish brown. Charcoal was found, as might have been expected, at the border of the hearth at (1) in the plan.

The second feature is the raised terrace, indicated in the shading, against the fireplace, and extending on the south side from near the doorway half down the length of the house.

It is well known that, however humble the Norse habitation (and it is as true alike of their ancient kinsfolk the Gaels,—Scotch Highlanders), there is always an apartment for the women separated by partition from the general interior. Such an arrangement is, as I conceive, indicated in this feature of the remains of Leif's house. This apartment was not needed for Leif, or for Thorwald who succeeded him, whose companions were wholly men; but it was set up for Gudrid, the wife of Thorfinn,

¹ See "Scots of the Northmen."

who succeeded Thorwald. There seems to be another narrow platform more distant from the door. May it have been for Gudrid's maid?

This house, with the Norse hearth, is in the region of the fish-pits and traces of huts which I have elsewhere described, and of what I conceive to have been the large double-house of Thorfinn's larger party, and in the centre of the unique topography described in the Sagas, in the latitude 42° 20'.¹

I do not propose to exhaust this archæological field, but to leave to others the pleasure of unveiling new evidences of ancient works and early settlements which are still undisturbed in the immediate neighborhood. I have so far carefully guarded against the obliteration of any features of the surface, so that all that is left to us of the superficial expression may be preserved.

There is an indefinitely large field for archæological research awaiting the student who is willing to work, and who will be certain to secure great satisfaction in discoveries. I have described a part only of what I have found. There is vastly more for the patient student to discover for himself.

If the discoverer publish an account of what he finds, he will be quite certain to make mistaken inferences, and the critics will not permit him to forget it. At this, however, he must not be dismayed. It was a great and good master who gave consolation to one who was deploring a mistake in judgment, in these terms: "Do not be troubled; men who do not work make no mistakes."

I do not enter upon the detailed account of the other remains in the immediate neighborhood, — as the fish-pits; a mound with a depression on the top, or it may be the remains of a tower; the traces of huts, and of what I have regarded as the large house of Thorfinn; the details of the boom-dams and the submerged forest; the canals; the battle-field where Thorbrand fell. I have scarcely more than alluded to these remains in earlier publications.

¹ See "Landfall of Leif Erikson."

THE GRAVES OF THE NORTHMEN.



THE GRAVES OF THE NORTHMEN.

MY father — EBEN NORTON HORSFORD — called me to him the last night of the year eighteen hundred and ninety-two, to talk about the traces of the houses on the banks of the Charles River, built by the party of Thorfinn Karlsefni and Snorri Thorbrandson, two Icelanders, who came from Greenland in three ships, with one hundred and sixty men and their live-stock, intending to establish a colony in Vineland the Good, a few years after Leif Erikson had discovered that country in the year 1000 A. D.

My father had already examined the remains of the house built by Leif Erikson, as described in the preceding paper. He asked me, "What will you find in Thorfinn's house, if I found a fireplace in Leif's house? And if I found foundations for walls at Leif's house, what will you find to correspond with them at Thorfinn's house?" Then he told me to buy the land myself, and in the spring, when the frost was out of the ground, to get an iron rod and strike it into the earth to find the fireplace; and afterwards to find the foundation walls in the same way, — because he wanted me to have the pleasure of making a discovery myself.

The next night, the first evening of the New Year, I asked my mother's permission to finish and edit my father's unpublished works, and was comforted with the promise that I might do that service for him.

During the long days and evenings which followed, while the ground was still covered with snow, I read many books about the Northmen and their customs, to learn what I might hope to find when the time came in the spring for me to look for the remains of Thorfinn's long house on the bank of the river. I remembered Longfellow's poem of "The

Skeleton in Armor," — its romance, its mystery, its charming impossibility. I wished I might find a skeleton in armor.

On page 18 of Arthur Middleton Reeves's "The Finding of Wineland the Good," I found an extract from the Eyrbyggja Saga, the vellum manuscript of which is in the Ducal Library of Wolfenbüttel. It is not one of the so-called Vineland Sagas. The extract reads as follows:—

"After the reconciliation between Steinthor and the people of Alpta-firth, Thorbrand's sons, Snorri and Thorleif Kimbi, went to Greenland. From him Kimbafirth (in Greenland) gets its name. Thorleif Kimbi lived in Greenland to old age. But Snorri went to Wineland the Good with Karlsefni; and when they were fighting with the Skrellings there in Wineland, Thorbrand Snorrason, a most valiant man, was killed."

And on page 48 of the Saga of Thortinn Karlsefni and Snorri Thorbrandson I read that during a battle with the Skraellings Freydis "found a dead man in front of her. This was Thorbrand. Snorri's son, his skull cleft by a flat stone. His naked sword lay beside him; she took it up and prepared to defend herself with it."

So a man — a valiant man, the son of one of the two leaders of the expedition — was killed in Vineland; and if his skeleton could be found, his skull would be cleft by the stone which caused his death. But where could it be found?

In Du Chaillu's "Viking Age" I read of the wonders of the archæology of the North. — how the spade has developed the history of Scandinavia, together with the Saga and Edda literature. I give a few selections from it:—

"'Odin enacted the same laws in his land as had formerly prevailed with the Asar. Thus he ordered that all dead men should be burned, and on their pyre should be placed their property. He said thus, — that with the same amount of wealth they should come to Valhalla as they had on the pyre; that they should also enjoy what they had themselves buried in the ground, but the ashes should be thrown into the sea, or buried in the earth; that over great men mounds should be raised as memorials, and over men who had some manfulness *bautasteinar* should be erected. And this custom was observed for a long time.' (Ynglinga Saga, c. 8.)

"It was the custom of powerful men, whether kings or jarls, at that time to learn warfare, and win wealth and fame; that property should not be counted with the inheritance, nor should sons get it after fathers, but it should be placed in the mound with themselves." (*Vatnsdaela*, 21.)

"The first age is called the age of burning; then all dead men were burned, and bautastones raised after them. But after Frey had been mound-laid at Uppsälir, many chiefs raised mounds as well as bautastones to the memory of their kinsmen. Afterwards King Dan the Proud had his own mound made, and bade that he, and also his horse with the saddle on, and much property, should be carried to it when dead in king's state and in war-dress. Many of his kinsmen did the same afterwards, and the mound-age began in Denmark. But the burning age lasted a long time after that with the Northmen and the Swedes." (*Prologue of Heimskringla*.)

"The first age was the one when all dead men were to be burnt. Then the mound-age began, when all powerful men were laid in mounds and all common people buried in the ground." (*Saint Olaf's Saga*. Prologue.)

"On the following morning Hrolf had the field cleared, and divided the booty among his men. There were raised three very large mounds. In one, Hrolf placed his father, Sturlaug, and Krák, Hrafn's brother, and all the best champions of their host who had fallen. In that mound were put gold and silver and good weapons, and all was well performed. In the second was placed King Eirik, Brynjólf, and Thórd, and their picked men. In the third was Grim Aegir, near the shore, where it was thought least likely that ships would approach. The warriors were buried where they had fallen." (*Göngu Hrolf's Saga*, ch. 34.)

Since Thorbrand was a man of power, over him surely a mound ought to have been raised.¹

But what was this property which Odin said should be buried in the mounds with the dead? Vessels of clay, of gold, of silver, and of glass; bronze kettles, vases, glass beads, amber beads, mosaic beads, bracelets, knives, rings, buckles, and fibulæ; hundreds and thousands of Roman coins, and bronze articles of Roman workmanship; ornaments of gold and silver; harness mountings, spurs, bits, fine swords, spears, axes, ring-armor,

¹ The reasons why Helgi, Finnbogi, and those of their party who were killed, should not have been mound-laid, are obvious. The man who fell in the same battle with Thorbrand may have been buried with him.

helmets, drinking-horns, etc., — all these are illustrated in the "Viking Age." The account reads like a story from the Arabian Nights.

Thorbrand's sword, then, would have been buried with him, — the one with which Freydis struck herself when she terrified the Skraelings so that they ran down to their boats and rowed away.

I ought here to tell my readers that a circular mound twenty-three feet in diameter and about two feet high, on what I suppose to be the battle-ground of the fight between the Northmen and the Skraelings, spoken of in my father's paper, had already aroused my curiosity. Thorbrand the Valiant may have been buried where he fell.

After this I began to read H. R. Schoolcraft's large and beautifully illustrated "History, Condition, and Prospects of the Indian Tribes of the United States." I was looking for something quite different, when I stopped to think over the following sentence: "This idea, wherever the ancient inhabitants of America came from, is indelibly imprinted on the character of the burial-mounds." Could these burial-mounds, so like those I had been studying a few days before, have been made by the Northmen, or the descendants of Northmen? Du Chaillu says: —

"Every tumulus described by antiquaries as a Saxon or Frankish grave is the counterpart of a Northern grave, thus showing conclusively the common origin of the people.

"Wherever graves of the same type are found in other countries, we have the invariable testimony either of the Roman or Greek writers, of the Frankish and English Chronicles, or of the Sagas, to show that the people of the North had been in the country at one time or another.

"The conclusion is forced upon us that in time the North became over-populated, and an outlet was necessary for the spread of its people.

"The story of the North is that of all countries whose inhabitants have spread and conquered, in order to find new fields for their energy and over-population. In fact, the very course the progenitors of the English-speaking peoples adopted in those days is precisely the one which has been followed by their descendants in England and other countries for the last three hundred years."

Vicary in "Saga Time" writes of these graves:—

"They are found in the southeast of Norway, North Germany, and extend to the Gulf of Riga. They are in numbers by the Vistula. They occur in Holland, Belgium, England, Ireland, the Channel Islands, France, Spain, and Portugal. There are a few in Switzerland, near the Jura Mountains; also in Italy, Corsica, and Sardinia. In North Africa they are very numerous, to eighty miles from the coast. They are found in the Morea, Crimea, and the shores of the Black Sea. It is to be noted, speaking in a broad sense, that the *stendösar* are near the sea-coast or a river's bank."

Why may they not have spread over America too,—Vineland and Norumbega being the gateway to their new world?

At this time I received the annual Report of the Board of Managers of the Buffalo Historical Society. Among the list of gifts to the Society was that of Coroner H. B. Ransom, consisting of a skull, two leg-bones, and other relics of human anatomy, together with two brass kettles,—all being but a small part of the "find" by some workmen while excavating for a new street near the Buffalo Creek, where Clinton Street crosses the city line. The Report says: "The relics are beyond doubt the remains of the ancient Kaw Kwahs, a portion of the Neutral Nation, which became extinct somewhat over two hundred years ago."

I wrote to the Secretary of the Society, Mr. George G. Barnum, and asked for photographs of these brass kettles, to see if they were like any of the kettles illustrated in the "Viking Age."

Mr. Barnum promised to send me the photographs. At the same time he sent me a small pamphlet entitled "Interesting Archæological Studies in and about Buffalo," by William Clement Bryant. On the eighth page of this book the first paragraph startled me, as it will any one who has read the books by Eben Norton Horsford about the settlements of the Northmen on the Charles River.¹ I quote from this and from following pages:—

"The State of New York, and particularly its central and western portions, as my audience are well aware, abounds in tumuli and defensive earthen intrenchments or

¹ See "Problem of the Northmen," "Discovery of the Ancient City of Norumbega," and "Defences of Norumbega."

fortifications. When the doomed red man sullenly retired, and the triumphant pale face, axe-on-shoulder, came upon the scene, these ancient, silent mounds and moats, lying in the heart of the damp and columned woods, puzzled the curious pioneer. His posterity, in the most filial spirit, have gone on puzzling about them ever since.

"Erie and Jefferson counties, according to Squier, possess a larger number of these ancient works than any other equal extent of territory in the State. There are over forty in this county alone. Although many of them have been obliterated by the plow, a few remain in such a condition as to admit of their being accurately traced and surveyed.

"One of these 'ring forts' was located within the boundaries of our city, and embraces the 'Old Indian Burial Ground' at East Buffalo. A plan of it can be found in Schoolcraft's 'Notes on the Iroquois.' When I first saw it, thirty years ago, a portion of the encircling mounds and moat was clearly defined. They have since become indistinguishable.

"The origin of these remains has been the subject of learned controversy. By some they have been attributed to the mound-builders, or some congener of that almost mythological people.

"The settlements of the Eries extended as near to our locality as the Cattaraugus Creek. A few years since, in company with my Seneca friend Nick Parker, I visited the site of an Erie village situated on the crest of a hill, — one of the range which shuts in the valley on the north or Erie County side, and about six or seven miles from where the creek, or more properly river, empties into Lake Erie. Near by were the cabins of the two Indian proprietors of the farms we were visiting, — Ruth Stevenson, the step-daughter of Red Jacket; and Rev. Mr. Silverheels, a lay preacher. The evidences of ancient Indian occupancy were very abundant. The first objects which rewarded my search were two earthen pipes, a portion of the stems fractured, but the bowls intact and artistically moulded in the shape of the Neutrals' or Cat totem, a raccoon! . . . We also found a banner-stone gorget, several brass or bronze arrow-heads, a neatly chiselled hammer-stone (?), and innumerable fragments of pottery. . . . Mr. Silverheels told me that when the Senecas first settled in this region the land was covered by a dense forest, and that running along the brow of the hill from the lake, several miles up the creek, was a well-defined ditch or moat, the exterior wall of which was elevated several feet above the surrounding surface.

"Let us pause here, and give a few moments' consideration to the question, What race constructed these ancient defensive works in western and central New York? Although built on a much humbler scale, and without any traces of a religious or mythological purpose, they suggest and bear a faint likeness to the august monuments of the mound-builders. It is worthy of remark, too, that as a rule these fortified villages lay on or near the several watercourses leading into the heart of the country occupied by that enigmatical race. Our primitive population utilized these natural highways, preferring to glide down or paddle up a river, in their birchen canoes, to the more toilsome method of threading in their moccasins the damp and sinuous forest trails.

"The Indians who inhabited this country at the time of the discovery ought, one would think, to know something about the origin and history of these ancient remains, for their antiquity is not great as time is reckoned in old-world chronicles. The testimony of the Indians, however, if it have any weight as to the origin of these works, would deprive their ancestors of the credit of their construction. With a singular unanimity they declare that these ancient intrenchments were the product of a race who preceded them in the occupancy of the country, and who were not Indians. It is remarkable that natives so intelligent as Brant, Seneca White, and others, as well as the captive Mary Jemison, should have evinced so lively an interest in the subject, as it is well known they did, and yet have to confess their total ignorance about their origin and purpose. It would seem that the captive Neutrals and Eries must have preserved some tradition of the fact if their fathers builded them.

"The proofs that these ancient earthworks are attributable to the red men, of the Huron-Iroquois family, are to my mind convincing."

If this be true, the Huron-Iroquois tribes are descended from the Northmen and the natives; for the same race of men who made these ancient earthworks must also have made the ditches, fortifications, and moats at Stony Brook, at Fort Norumbega, and at Millis.

On the nineteenth of April, as the frost was out of the ground, I began my search for the remains of the long house built by Thorfinn's party.

It is not easy for an amateur to find the foundations of a house after they have been buried several hundred years, even when they can be traced

by ridges of earth as plainly as these could be. For an hour or more I watched the earth thrown up, and probed the ground in vain. At noon I went for Mr. Scorgie, who had made the excavations at Leif's house under my father's direction, and asked him to show me how to find the foundations and fireplace of this house. He soon found them for me. The ring of the iron rod against the stones, as he struck for the north wall, was distinct and sharp. In the afternoon I asked him to undertake the direction of the work; and when I went there later he had outlined with the rod two walls about sixty-four feet long, having first found the end wall at the south.

The excavations can be seen in the plan. One trench shows the north wall; two cross-trenches show the side walls; at the south end



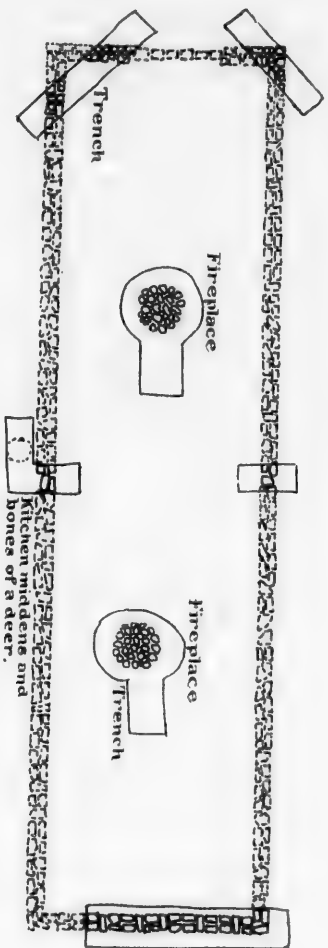
ANCIENT HOUSE OF THE NORTHMEN. (From "Saga Time.")

a diagonal trench shows the south and east walls, and another crosses the southwest corner.

Apparently, when they began to build the house, trenches were dug, and into them large and small stones were thrown and packed together with earth. On this solid foundation the logs of wood rested, as can be seen in the illustration taken from Vicary's "Saga Time." The following description is also taken from the same book:—

PLAN OF REMAINS OF
 GEORGE WORSSE DWELLING
 ON
 CHARLES RIVER

Scale 10 ft. to an inch.
 April 22, 1893.
 George Davis C. E.



North



"The houses of the Northmen in Saga time were of one type. They were built of wood, where it could be obtained. Logs of wood were roughly hewn and placed one over the other, and the interstices filled with moss. Outside, wood-tar was used: inside, hangings of skin or coarse cloth. Occasionally, the inside of the house was lined with rough boards. The roof consisted of boards covered with birch-bark, on which turf was placed. The same description of building existed in Sweden and in Courland, as it is so stated in Egil Skallagrimsson's Saga.

"There were no chimneys, and an upper room or loft was comparatively unusual. The interior of the house consisted of one room open to the roof, and the smoke of the fire found its way through a hole, which could be shut with a framework, on which the caul of a calf was stretched. In the upper part of the walls of the house holes were made, called *gluggar*. Sometimes these were in the lower part of the roof, and were called wind-eyes (*vindöie*), hence the word 'window.' These windows were closed with shutters or trap-doors. Under the *ljören*, or opening where the smoke left the house, was the fire, which was lit on the floor, or on a few stones placed for the purpose. In larger houses the fire was nearly as long as the hall. Trunks of trees were lit in such a manner that they burnt through their whole length. On the floor was the tub that held the *mjød*, or mead, and from which that liquid was served in horns to the guests. On formal occasions the floor was strewn with straw or rushes.

"The shape of the house was rectangular, — the longer sides facing north and south; the ends, east and west."

But in this long house, the foundations of which I discovered, were two fireplaces; the stones, which showed the action of heat, were neatly laid together, with a few clam-shells and oyster-shells near by. It was a surprise to find two fireplaces; and this fact troubled me, until I found a reason for it in the "Viking Age": —

"There was no ceiling within the roof; the smoke from the open hearths on the floor, which covered the inside with soot, escaped through the *ljöri*, of which there was at least one, and which also admitted light." (Ynglinga Saga, 34.)

Sometimes, then, they had more than one fireplace in their houses.

In digging the trench across the east wall, a small cavity filled

with kitchen midden¹ was found, containing the teeth and bones of a deer.²

I carried my excavations no further, because my father did not wish to have the ridges destroyed by which he discovered the site of the house.

There are near by, and yet undisturbed, traces of other houses as described in the Sagas.

At this time, while I was working at the site of Thorfinn's house, I found in the Notes and News of the January number of the American Anthropologist the name "Shawnee." I remembered that my father had once told me that "Shawnee" was a descriptive name given by the natives to the Northmen; so I looked with interest to see what the writer would say about them. I quote the following:—

"Attention has been drawn by several writers to the fact that the form of sepulture called box-stone graves is found wherever Shawnees dwelled. They are found in central Tennessee, which was for a long time their fixed home; in the Cherokee country, where a band lived for a time; in northern Georgia, where there were some villages of them; in Pennsylvania, where they lived with the Delawares; in Ohio, and southern Illinois. No other Indians have been known to practise this mode of burial, except, to some extent, tribes with whom or near whom the Shawnees lived,—the Delawares and some of the Illinois tribes. The box-stone graves must be accepted as an ethnic characteristic of the Shawnees.

"In Tennessee, where the nation long had their home, cemeteries of box-stone graves are habitually associated with mounds; such graves are frequently found in

¹ For a few of my readers who may not know the exact meaning of "kitchen-midden" I give the definition taken from the Century Dictionary:—

"A shell-mound: the literal translation of the Danish *køkken-mødding*.—kitchen refuse. This refuse forms extensive heaps or mounds, which consist chiefly of the shells of edible mollusks mixed with fragments of bones of various animals, and implements of stone, bone, and horn. Mounds of this kind are found in large numbers on the eastern coast of Denmark, in various parts of Scotland along the shores of the firths, as well as in Ireland and elsewhere. They are the refuse heaps which accumulated around the dwellings of former inhabitants, and in the case of Denmark are believed by the best authorities to be referable to the early part of the Neolithic age, 'when the art of polishing flint implements was known, but before it had reached its greatest development.'"

² Examined at the Museum of Comparative Zoology, Harvard University.



Traces of the long house built by the party of Thorfinn Karbesfni and Snorri Thordarandson in Vineland.



mounds, and mounds are sometimes little more than a cover over tiers of graves. In Illinois the same contiguity and intermingling are found. It is certain that the mounds which contain such stone graves were built by the men who made the graves. That being admitted, there is little room left to doubt that the associated mounds and connected works were built by the same people. Hence it follows that the Shawnees, when a sedentary people, habitually made mounds and associated earthworks.

"One of the Etowah group, a considerable mound, but dwarfed by the grandeur of the great one of the group, when carefully excavated was found to have been built over a group of stone graves. In some of these graves were found copper plates, incised, or stamped or hammered with outlined figures. These when found baffled conjecture. The care with which the excavation was made by practised hands left no room for suspicion of fraud. They were, then, placed there by those who made the graves.

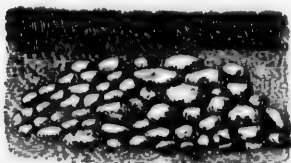
"At first sight the figures stamped upon the copper plates seemed Mexican or Central American; but closer examination showed that while the figures in general were of the Mexican type, there were some differences. Some of the figures are winged; the wings are represented as part of an entire bird-skin enveloping the figure, as in the Indian designs, but are made to spring from the body behind and between the shoulders, which is a European conception. The drawing of the limbs is European, not Indian. On one plate are distinct marks of a sharp metallic tool. Another is made of pieces welded together. Several are fastened by small rivets, neatly wrought. The workmanship was European; the plates were made by Europeans to represent Indian designs. The question remained, How did they get to the northern part of Georgia when none are found south of that point?"

The Shawnees, then, buried their dead in typical Norse graves, both in mounds and in cemeteries. On reading Dr. Cyrus Thomas's "Problem of the Ohio Mounds," and "The Shawnees in Pre-Columbian Times," a great deal of light was thrown on the subject, and to illustrate it plainly I must quote from these papers:—

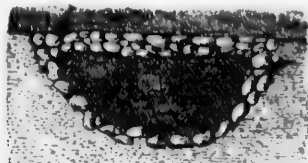
"There are several forms and varieties of stone graves, or cists, found in the mound area, some being of cobble-stones, others of slabs; some round, others polygonal; some dome-shaped, others square, and others box-shaped, or parallelograms. . . .

"These graves, as is well known, are formed of rough and unhewn slabs, or flat pieces of stone, thus: First, in a pit some two or three feet deep and of the desired

dimensions, dug for the purpose, a layer of stone is placed to form the floor; next, similar pieces are set on edge to form the sides and ends, over which other slabs are laid flat, forming the covering, the whole when finished making a rude, box-shaped



CINERARY DEPOSIT. ("Viking Age," p. 127.)

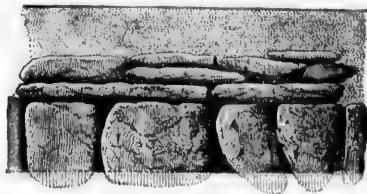


CINERARY DEPOSIT. ("Viking Age," p. 127.)

coffin or sepulchre. Sometimes one or more of the six faces are wanting; occasionally the bottom consists of a layer of water-worn boulders; sometimes the top is not a single layer of slabs, but other pieces are laid over the joints, and sometimes they are placed shingle-fashion. These graves vary in length from fourteen inches to eight feet, and in width from nine inches to three feet.

"It is not an unusual thing to find a mound containing a number of these cists arranged in two, three, or more tiers. As a general rule, those not in mounds are near the surface

of the ground, and in some instances even projecting above it. It is probable that no one who has examined them has failed to note their



STONE CIST. ("Viking Age," p. 134.)



INSIDE OF STONE CIST.
("Viking Age," p. 134.)

strong resemblance to the European mode of burial. Even Dr. Joseph Jones, who attributes them to some 'ancient race,' was forcibly reminded of this resemblance, as he remarks: 'In looking at the rude stone coffins of Tennessee, I have again and again been impressed with the idea that in some former age this ancient race

must have come in contact with Europeans, and derived this mode of burial from them."

The Shawnees, then, are probably descended from natives who had come in contact with the Northmen. Dr. Thomas's reasoning leads to but one conclusion about the builders of these graves. I will use his own words, hoping that those who are interested will read his articles and compare them with the archæology of Scandinavia:—

"The importance and bearing of this evidence does not stop with what has been stated, for it is so interlocked with other facts relating to the works of the 'veritable mound-builders' as to leave no hiatus into which the theory of a lost race or a 'Toltec occupation' can possibly be thrust. It forms an unbroken chain connecting the mound-builders and historical Indians which no sophistry or reasoning can break. Not only are these graves found in mounds of considerable size, but they are also connected with one of the most noted groups in the United States; namely, the one on Colonel Tumlin's place, near Cartersville, Ga., known as the Etowah mounds, of which a full description will be found in the Fifth Annual Report of the Bureau of Ethnology."



STONE COFFIN.
"Vik. Age," p. 134.

The articles found in these mounds next interested me. Cloth has been found, implements and ornaments of copper, silver in the form of ornaments, galena, the ore of lead, copper axes, knives, chisels, spear-heads, arrow-heads, awls, bracelets, pendants, tubes, gorgets, buttons, beads, etc.;¹ also silver beads, copper beads, pearls, and shells, spear-heads and arrow-heads of flint, quartz, garnet, and obsidian.² Clay vessels of many shapes and sizes can be seen at the Peabody Museum, which resemble closely illustrations of those taken from Norse mounds. Professor Putnam in the Sixteenth Annual Report of the Peabody Museum gives an account of the discovery of native gold, silver, copper, and iron; the canine teeth of bears and

¹ Shepherd's "Antiquities of the State of Ohio."

² Transactions of the American Ethnological Society, vol. ii.

other animals (teeth of animals are also found in Norse graves), and thousands of pearls, nearly all of which are perforated for suspension.¹

Especially characteristic of both the mound-builders and the Northmen are the amulets called by our American archæologists "gorgets," and by Du Chaillu "bracteates." Those found in the graves of the mound-builders are usually discs of shell about four inches in diameter, pierced with one or two holes near the top, by which they were suspended round the neck. They are beautifully polished, and are engraved with bird-heads, circles, stars, half-moons, crosses, snakes, human figures, etc.²

The account of the bracteates I take from the "Viking Age": —

"Among the most curious and beautiful ornaments that have been discovered in the North are the gold bracteates, which occur in great numbers, but are seldom found in graves, and which were used, as we can see from the loop attached to them, as an ornament to be worn hanging from the neck. That they were held to be protective amulets, and were used by the temple priests in religious ceremonies, is probable. They are formed by embossing or stamping upon a disc, and the gold is extremely thin. The peculiarity of their designs, and the mystic and symbolic signs which are used upon them — such as the svastica, the triskele, the cross, the triad in dots, birds, snakes, etc., peculiar shapes of animals, and the head-dress of men — are very remarkable; and the sign in the shape of an *S*, found also on objects of the bronze age, makes them specially interesting."

The arrow-heads of obsidian usually thought to have come from Mexico or west of the Rocky Mountains, also point to the Northmen.

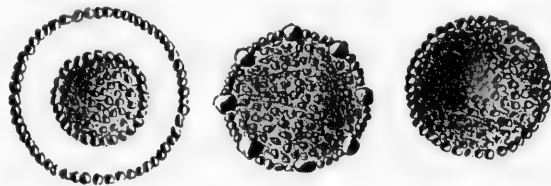
It will be seen from what I have shown, that, if the Northmen founded a colony at Norumbega on the Charles, a burial-ground containing typical Norse graves must have been near by, and that burial-mounds probably still remain in the neighborhood. The graves of the Northmen are usually found on elevated points overlooking the sea or fjords. The mound-builders of the West also selected high banks above rivers and streams for their fortified enclosures and their burial-grounds. Therefore, if one would find

¹ Shepherd's "Antiquities of the State of Ohio."

² Shawnees in Pre-Columbian Times.

a Norumbega graveyard, one should look on some hillside sloping to the Charles.

I chose a suitable place on a county map, where there were neither houses nor streets, about a quarter of a mile above the Bemis Station on the opposite side of the river. I drove as near to it as possible, then climbed a stone-wall and walked to the brow of the hill and looked down on the river terrace. For a moment I was keenly disappointed: there were no mounds. Nevertheless, I walked down to examine the land more closely. I soon saw that it was more or less covered with concave circles from six to eighteen feet in diameter, surrounded by stones, overgrown more or less with turf. There were also neatly laid circles paved with stones, slightly convex, and sometimes with an outline of larger stones at a distance of about a foot and a half from the paving. It was a cemetery of "stone-set graves," such as are shown in the following illustrations taken from the "Viking Age" (vol. i. p. 316).

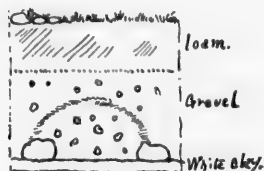


A few days after this I received permission from Dr. Bemis, the owner of the property, to examine these graves.

I chose one of the largest and best situated of those which I have described as concave, encircled by stones. The trench was started outside the circle, and for nearly three hours I watched the earth mixed with seashore sand, water-worn stones, and boulders thrown out by the spades of the workmen. At the end of that time I suddenly realized that the grave had been thoroughly excavated in the past; and not only that one, but all those which were concave had been opened. And yet for more than a century the land had been in Dr. Bemis's family, and

so far as he knew had never been disturbed until the metropolitan sewer was laid through it a short time ago.

My second choice was a small but neatly paved circle, which evidently had not been opened. I did not find the grave that afternoon, because



I did not begin my trench far enough outside the paved circle. A few days later I went there again and found it. Under the loam and two or more feet of gravel a hard layer of white clay was struck, about three inches thick, three feet broad, and seven feet long. On this, rounded stones outlined the form that had once lain there. Near the head the stones were larger. The illustrations above show an outline drawing and also a cross-section of the grave. There was no trace of bones or organic matter, and I realized then that I could no longer hope to see the skull of Thorbrand Snorrason, which had been cleft by a flat stone.

Near Grove Street, by the road between Watertown and Cambridge, looking down on a pond, is a group of mounds overgrown by large trees, — such mounds as I had expected to find on the river bank. There probably are many such groups not far from the ancient city of Norumbega, which are yet to be discovered. I add an illustration of burial-mounds (page 33) from the "Viking Age" (vol. i. p. 315).

When I returned home the photographs of the brass kettles, found in a Kah Kwah grave, had come from the Buffalo Historical Society, with a list of the other articles found at the same time, which were "one small kettle half the size of those in the photograph, a jack-knife, a thimble, half-a-dozen bracelets and ear-rings, half-a-dozen small bells strung on buckskin, and a few other little things." In this grave the remains of many skeletons were



Brass kettles found in a Kal-Kvrali grave now owned by the Buffalo Historical Society.



found, in accordance with one of the ancient Norse customs. "Several persons were often buried in the same mound; and after a battle, many of the slain were buried together."¹

The same day my niece and nephew, Gertrude and Augustus Fiske, sent me a message from Weston, telling me that they had discovered some ditches, like those at Stony Brook which their grandfather (Eben Norton Horsford) had shown them. I went to see them as soon as possible. They were primitive fortifications, outside of which were probably once the timber palisades, such as the Jesuit fathers found the Iroquois



Indians still using when they came to this country; such also as De Soto found about the habitations of the Indians, who were still mound-builders when he discovered the Mississippi River in 1539, and such as Thorfinn built about Leif's house in Vineland, as described in the "Flatey Book Saga." Below these fortifications a beautiful stream flowed by to a meadow. It flashed in the sunlight over the old stone dam, shaded by tall trees. Such a stream, dam, and meadow Liot and Thorbiorn may have owned in Iceland, when Liot closed his water-hatches and prevented Thorbiorn from using the meadow, and his wickedness "was heard of far and wide."²

It is generally known that a mysterious race now called the Mound-builders once occupied the central portion of the United States. Their

¹ Viking Age, vol. i. p. 328.

² Saga of Howard the Halt.

works are found over the whole of the Mississippi Valley. "They consist, for the most part, of mounds and enclosures of earth and stone, erected with great labor and manifest design, so numerous that in Ohio alone there are, or were till quite recently, not less than ten thousand of the mounds, and from fifteen hundred to two thousand enclosures. In other parts of the valley they are so numerous that no attempt has ever been made to count them all."¹

From the "Transactions of the American Ethnological Society," vol. ii. p. 137, I give the following further account of these earthworks:—

"They spread over a vast extent of country. They are found on the sources of the Alleghany, in the western part of the State of New York, on the east; and extend thence westwardly along the southern shore of Lake Erie, and through Michigan and Wisconsin, to Iowa and the Nebraska territory, on the west. We have no record of their occurrence above the lakes, nor higher than the falls of the Mississippi. Carver mentions some on the shores of Lake Pepin; and Lewis and Clarke saw them on the Missouri River one thousand miles above its junction with the Mississippi. They are found all over the intermediate country, and along the valley of the Mississippi to the Gulf of Mexico. They line the shores of the Gulf from Texas to Florida, and extend, in diminished numbers, into South Carolina. They occur in great numbers in Ohio, Indiana, Illinois, Wisconsin, Missouri, Arkansas, Kentucky, Tennessee, Louisiana, Mississippi, Alabama, Georgia, Florida, and Texas. They are found, in less numbers, in the western portions of New York, Pennsylvania, and Virginia, as well as in Michigan, Iowa, North and South Carolina, and in the Mexican territory, beyond the Rio Grande del Norte. In short, they occupy the entire basin of the Mississippi and its tributaries, as also the fertile plains along the Gulf.

"It is not to be understood that these remains are dispersed equally over the area here defined. They are mainly confined to the valleys of the streams, occupying the level, fertile terraces, and seldom occurring very far back from them."

These ancient remains consist of defensive and sacred enclosures, burial mounds, temple mounds, and effigy mounds.

¹ Antiquities of the State of Ohio (Preface).

"The enclosures constitute by far the most imposing class of these ancient remains. They are usually regular in outline, the square and the circle, separate or in combination, predominating; and they vary in size from an acre or less to three hundred and fifty and even four hundred acres.

"The mounds are usually simple cones in form; but they are sometimes truncated, and occasionally terraced, with graded avenues or spiral pathways to their summits. Some are elliptical, others pear-shaped, and others square or parallelograms, with flanking terraces."¹

A description of the Southern mounds at the time De Soto was here is full of interest, as quoted from the "American Antiquarian," by Dr. Cyrus Thomas:—

"It is a remarkable fact that the earthworks in the Southern States were, when discovered, occupied as village sites. A large number of these villages have been described, and although the sites have not been identified in later times, yet the descriptions indicate that the very mounds which are now being studied as objects of so great interest were then used as residences for the various tribes. Ferdinand de Soto and his army were the first to discover the mounds. Mention is frequently made of them by the historians of the expedition. . . . Some of the villages were surrounded by stockades, and were so situated as to be used for defences or for fortifications; but a large number of them are also described as having elevated mounds, which were used by the caciques for their residences, and as observatories from which they could overlook the villages. . . . The narrative shows that these prominent earthworks were associated universally with village life. Sometimes the dwelling of the cacique would be on the high mound which served as a fortress, the only ascent to it being by ladders [steps]. At other times, mention is made of the fact that from the summit of these mounds extensive prospects could be had, and many native villages could be brought to view. The villages are described as seated in a 'plain, betwixt two streams; as nearly encircled by a deep moat, fifty paces in breadth, and where the moat did not extend were defended by a strong wall of timber, . . . near a wide and rapid river, the largest they discovered in Florida.' This was the Mississippi. 'On a high artificial mound on one side of the village stood the dwelling of the cacique, which served as a fortress.' Thus, throughout this whole region, from the seacoast at Tampa Bay,

¹ Antiquities of the State of Ohio.

in the States of Florida, South Carolina, Georgia, Alabama, Mississippi [and] Arkansas, these ancient villages appeared, occupied by the various tribes, such as Creeks, Catawbas, Cherokees, Choctaws, Chickasaws, Quapaws, Kansas, and possibly Shawnees."¹

The mounds, ditches, palisades, and earthworks of the Northmen in England are described, with illustrations of ground-plans and sections, in "Mediæval Military Architecture," by George T. Clark. From this work I give a few selections:—

"These works, thrown up in England in the ninth and tenth centuries, are seldom, if ever, rectangular, nor are they governed to any great extent by the character of the ground. First was cast up a truncated cone of earth, standing at its natural slope, from twelve to even fifty or sixty feet in height. This mound . . . was formed from the contents of a broad and deep circumscribing ditch. . . . Though usually artificial, these mounds are not always so. Durham, Launceston, Montacute, Dunster, Restormel, Nant Cribba, are natural hills; Windsor, Tickhill, Lewes, Norwich, Ely, and the Devizes are partly so; at Sherborne and Hedingham the mound is a natural platform, scarped by art; at Tutbury, Pontefract, and Bramber, where the natural platform was also large, it has been scarped, and a mound thrown up upon it.

"It appears, then, that setting aside works that have not been identified, or which have been destroyed before note was taken of them, there are above a score of burhs, the date of the erection of which, and the name of the founder, are entered in a trustworthy record, and which are still to be seen. What then is a *burh*? A burh is a moated mound with a table top, and a base court, also moated, either appended to one side of it, or within which it stands. But the burhs, the dates of which are on record, and which are thus described, are but a very few of those found all over England, in the lowlands of Scotland, and on the marches bordering on Wales, which from their precise similarity in character to those actually identified must be assumed to be of like date and origin, and may therefore safely be attributed to the ninth and tenth and possibly to the eighth centuries, and to the English people,—that is, to the Northern settlers generally, as distinguished from the Britons and the Romans.

¹ The American Anthropologist. Vol. IV. No. 2.

"In Scotland, upon the mound called the 'Butte of Dunsinane,' tradition places the residence of Macbeth early in the eleventh century.

"There are not wanting descriptions of these timber-defended works. . . .

"Another quotation, taken also from M. de Caumont, from the Life of John, a canonized prelate of the church of Terouane, by Archdeacon Colmier, gives an account of the fortress of Merchem, near Dixonude, in which the material employed and the mode of construction are clearly set forth:—

(*Translation.*)

"It chanced that in a town called Merchem, Bishop John had a guest-house. There was also close to the court of the church a strong place, which might be regarded as a castle or a municipium, very lofty, built after the fashion of the country by the lord of the town many years ago. For it was customary for the rich men and nobles of those parts, because their chief occupation is the carrying on of feuds and slaughters, in order that they may in this way be safe from enemies, and may have the greater power for either conquering their equals or keeping down their inferiors, to heap up a mound of earth as high as they were able, and to dig round it a broad, open, and deep ditch, and to girdle the whole upper edge of the mound, instead of a wall, with a barrier of wooden planks, stoutly fixed together with numerous turrets set round. Within was constructed a house, or rather citadel, commanding the whole; so that the gate of entry could only be approached by a bridge, which first springing from the counter-scarp of the ditch was gradually raised as it advanced, supported by sets of piers, two or even three, trussed on each side over convenient spans, crossing the ditch with a managed ascent so as to reach the upper level of the mound, landing at its edge on a level at the threshold of the gate.¹

"The description is illustrated by the representation of the taking of Dinan, in the Bayeux tapestry. There is seen the conical mound surmounted by a timber building, which two men with torches are attempting to set on fire, while others are ascending by a steep bridge which spans the moat and rises to a gateway on the crest of the mound.

"In claiming for these moated mounds a Northern and in Britain an English origin, it would be too much to assert that in no other class of works is the mound

¹ Vita Sti Johannis Epis: Morinorum, Ob. 1130. [Acta Sanctorum, Januarii 27.]

employed, or by no other people than the Northmen; but it may be safely laid down that in no other class of early fortification does the mound occur as the leading and typical feature."

Regarding the sacred enclosures, I quote from Shepherd's "Antiquities of the State of Ohio":—

"A very large proportion of the ancient enclosures of Ohio, perhaps nine-tenths of the entire number, belong to that class known as sacred enclosures. The defensive enclosures . . . are irregular in outline, and are situated, with very few exceptions, on hill-tops, overlooking bottoms, or at a little distance from them, or on the points formed by the confluence of rivers and creeks. The sacred enclosures, on the other hand, are mostly regular in outline, and occupy the broad and level river-bottoms, seldom occurring upon the table-lands, or where the surface is undulating or broken.

"The works of this class are mostly square or circular in form, and are usually found in groups. The walls of much the larger portion of the works are comparatively slight, varying from three to seven feet in height. . . . The greater number of the circles are of small size, with a nearly uniform diameter of two hundred and fifty or three hundred feet, and invariably have the ditch interior to the wall. . . . It frequently happens that they have one or more small mounds, of the class denominated sacrificial, within the walls."

A letter to my father¹ describes the equivalent of these places of worship in Scandinavia. The writer said that the Odinic religion might be looked to for possible evidence of the Norsemen, although at the time of the settlement of Norumbega it was being, or had been, superseded by the Christian religion; but it is seen by the history of that time that the two religions existed side by side without conflict or animosity.

The Odinic religion had certain ceremonies for which were provided temples and circular high places which they called *hörqs*. On these high places certain vestal virgins officiated, called *Hörqa brudr* (Brides of the Hörg). A ceremony practised on these hörqs was a dance, which they called the *hörqa-dans*. This hörq was a circular mound raised above the common level of the country, and built on comparatively level ground,

¹ From George W. Johnson, Esq., San Francisco, California.

the outer edge being protected by a circular wall of rock, and the top paved with flat stones. In the centre or near it there was an altar, or perhaps more than one, three or four feet high; and round this a congregation of from fifty to several hundred persons would dance to coarse and rough music made by rude instruments or by singing. It is said that some of these hürgs are still extant in portions of Scandinavia, or at least evidences of them.

I have found other descriptions of these hürgs in the "Viking Age" and in Vigfussen's Icelandic-English Dictionary.

I have already written of the burial-mounds. Both here and in Scandinavia they vary greatly in size. They are found as small as ten feet in diameter and two feet high; while Anund's mound in Vestmanland is six hundred and fifty-two feet in circumference and eighty-four feet high; and the Grave Creek mound in Virginia is six hundred yards in circumference and ninety feet high.

"The mounds and cairns are not always round. They are sometimes square, oblong, rectangular, and triangular."¹

The same day that I saw the ditches and dams at Little Penniman's in Weston, I drove to Wayland to see the collection of Indian relics at the town hall. The people of Wayland are proud, and justly so, of these articles found in their own fields and woods. The gouges, hatchets, spears, arrow-heads, pestles, etc., are beautifully made and polished. Of these I will describe one only, — a rounded implement, with a handle, about four inches long and as many broad, made of obsidian. This, Mrs. John Heard, who showed the relics, said was their greatest treasure, as obsidian is rarely found here. I looked up "obsidian" in the town hall Encyclopædia, but found out little more than that it was of volcanic origin. On my way back to Cambridge I pondered over the obsidian. What did it mean? Where could it have come from, and where had I seen the same mineral, lately?

When I got home I looked up "obsidian" in the Encyclopædia Britannica;

¹ Viking Age.

its external character and localities I give here in part: "Iceland agate, *vulgo*. This mineral is found in masses, and sometimes in rounded pieces. Lustre resplendent, vitreous; fracture perfectly conchoidal; fragments very sharp-edged. The most common color of obsidian is perfectly black. . . . It is hard and easily frangible. . . . This mineral is found in Iceland, in Siberia, in the Lipari Islands, in Hungary, in Madagascar, the island of Teneriffe, in Mexico, Peru, and some of the South Sea islands. . . . Obsidian was long supposed to have a volcanic origin; but it appears from the accounts of those who have visited Iceland, that it is not only found in the vicinity of Hecla, but everywhere, distributed like quartz and flint; and besides it is not unfrequent in countries where volcanoes were never known to exist." Elsewhere I read that no deposits of obsidian have been found in the United States east of the Rocky Mountains.

When I went upstairs I went to the little tray on my toilet table, where I keep the relics which I found between two and three feet below the surface of the ground, close to the north wall of Thorfinn's long house near the river. One of these I took up. It was black, opaque, and vitreous; its lustre was resplendent, its fracture was conchoidal: it was obsidian.¹

Some of my readers may be disappointed because I have not opened what I think may be the grave of Thorbrand the Valiant. I have not done so because I think that this work should be done by an archæologist, who might be able to identify what would then be the earliest historical grave in the United States.

¹ Examined at the Mineralogical section of the Harvard University Museum.

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